

Sequence Listing

Sequence Listing

<110> Chen, Jian
 Filvaroff, Ellen
 Goddard, Audrey
 Gurney, Austin
 Li, Hanzhong
 Wood, William I.

<120> IL-17 HOMOLOGOUS POLYPEPTIDES AND THERAPEUTIC USES
 THEREOF

<130> P1381-R1

<141> 1999-05-14

<150> US 60/085,579

<151> 1998-05-15

<150> US 60/113,621

<151> 1998-12-23

<160> 26

<210> 1

<211> 180

<212> PRT

<213> Homo sapiens

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Met	Asp	Trp	Pro	His	Asn	Leu	Leu	Phe	Leu	Leu	Thr	Ile	Ser	Ile
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Phe	Leu	Gly	Leu	Gly	Gln	Pro	Arg	Ser	Pro	Lys	Ser	Lys	Arg	Lys
				20					25					30

Gly	Gln	Gly	Arg	Pro	Gly	Pro	Leu	Ala	Pro	Gly	Pro	His	Gln	Val
				35					40					45

Pro	Leu	Asp	Leu	Val	Ser	Arg	Met	Lys	Pro	Tyr	Ala	Arg	Met	Glu
				50					55					60

Glu	Tyr	Glu	Arg	Asn	Ile	Glu	Glu	Met	Val	Ala	Gln	Leu	Arg	Asn
				65					70					75

Ser	Ser	Glu	Leu	Ala	Gln	Arg	Lys	Cys	Glu	Val	Asn	Leu	Gln	Leu
				80					85					90

Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
 95 100 105
 5 Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
 110 115 120
 Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
 125 130 135
 10 Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
 140 145 150
 Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
 155 160 165
 15 Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
 170 175 180
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 <212> DNA
 <213> Homo sapiens
 25 <400> 2
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 cctcacaacc tgctgtttct tcttaccatt tccatcttcc tggggctggg 100
 30 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccttggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 35 ggcccagctg aggaacagct cagagctggc ccagagaaag tgtgaggtca 300
 acttgcagct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350
 40 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaaccctt caccatgcag gaggaccgca 450
 gcatgggtgag cgtgccggtg ttcagccagg ttctgtgcg ccgccgcctc 500
 45 tgcccggcac cgccccgcac agggccttgc cgccagcgcg cagtcatgga 550
 gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600

gccaggccag cagcccgaga ccatacctcct tgcacctttg tgccaagaaa 650

ggcctatgaa aagtaaacac tgacttttga aagcaag 687

5

<210> 3

<211> 197

<212> PRT

<213> Homo sapiens

10

<400> 3

Met	Thr	Leu	Leu	Pro	Gly	Leu	Leu	Phe	Leu	Thr	Trp	Leu	His	Thr
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15

Cys	Leu	Ala	His	His	Asp	Pro	Ser	Leu	Arg	Gly	His	Pro	His	Ser
				20					25					30

His	Gly	Thr	Pro	His	Cys	Tyr	Ser	Ala	Glu	Glu	Leu	Pro	Leu	Gly
				35					40					45

20

Gln	Ala	Pro	Pro	His	Leu	Leu	Ala	Arg	Gly	Ala	Lys	Trp	Gly	Gln
				50					55					60

25

Ala	Leu	Pro	Val	Ala	Leu	Val	Ser	Ser	Leu	Glu	Ala	Ala	Ser	His
				65					70					75

Arg	Gly	Arg	His	Glu	Arg	Pro	Ser	Ala	Thr	Thr	Gln	Cys	Pro	Val
				80					85					90

30

Leu	Arg	Pro	Glu	Glu	Val	Leu	Glu	Ala	Asp	Thr	His	Gln	Arg	Ser
				95					100					105

Ile	Ser	Pro	Trp	Arg	Tyr	Arg	Val	Asp	Thr	Asp	Glu	Asp	Arg	Tyr
				110					115					120

35

Pro	Gln	Lys	Leu	Ala	Phe	Ala	Glu	Cys	Leu	Cys	Arg	Gly	Cys	Ile
				125					130					135

40

Asp	Ala	Arg	Thr	Gly	Arg	Glu	Thr	Ala	Ala	Leu	Asn	Ser	Val	Arg
				140					145					150

Leu	Leu	Gln	Ser	Leu	Leu	Val	Leu	Arg	Arg	Arg	Pro	Cys	Ser	Arg
				155					160					165

45

Asp	Gly	Ser	Gly	Leu	Pro	Thr	Pro	Gly	Ala	Phe	Ala	Phe	His	Thr
				170					175					180

Glu Phe Ile His Val Pro Val Gly Cys Thr Cys Val Leu Pro Arg
 185 190 195

Ser Val

5 197

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<211> 1047

<212> DNA

10 <213> Homo sapiens

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15 tgacgctcct ccccggcctc ctgtttctga cctggctgca cacatgcctg 100

gcccaccatg acccctccct cagggggcac cccacagtc acggtacccc 150

20 aactgctac tcggctgagg aactgccct cggccaggcc cccccacacc 200

tgctggctcg aggtgccaaag tgggggcagg ctttgctgt agccctgggtg 250

tccagcctgg aggcagcaag ccacaggggg aggcacgaga ggccctcagc 300

25 tacgaccag tgcccgggtgc tgcggccgga ggaggtgttg gaggcagaca 350

cccaccagcg ctccatctca ccttgagat accgtgtgga cacggatgag 400

gaccgctatc cacagaagct ggccttcgcc gagtgcctgt gcagaggctg 450

30 tatcgatgca cggacggggc gcgagacagc tgcgctcaac tccgtgcggc 500

tgctccagag cctgctgggtg ctgcgccgcc ggccctgctc ccgcgacggc 550

35 tcgggggtcc ccacacctgg ggcctttgcc ttccacaccg agttcatcca 600

cgtccccgctc ggctgcacct gcgtgctgcc ccgttcagtg tgaccgccga 650

ggcgtgggg cccctagact ggacacgtgt gctccccaga gggcaccccc 700

40 tatttatgtg tatttattgt tatttatatg cctcccccaa cactaccctt 750

ggggtctggg cattccccgt gtctggagga cagcccccca ctgttctcct 800

45 catctccagc ctcagtagtt gggggtagaa ggagctcagc acctcttcca 850

gcccttaaag ctgcagaaaa ggtgtcacac ggctgcctgt accttggtc 900

cctgtcctgc tcccggttc ccttacccta tcaactggcct caggccccgc 950
 aggetgcctc ttcccaacct ccttggaagt acccctgttt cttaaacaat 1000
 5 tatttaagtg tacgtgtatt attaaactga tgaacacatc cccaaaa 1047

<210> 5

<211> 830

<212> DNA

10 <213> Homo sapiens

<220>

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<222> 105-115

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 20 cctggttcctt gctccttggg actctgggac ttacaccagt ggcacccttg 100
 gctcnnnnnn nnnnnaattc ggtacgaggc tgggggttcag gcgggcagca 150
 gctgcaggct gaccttgcag cttggcgga tggactggcc tcacaacctg 200
 25 ctgtttcttc ttaccatttc catcttcctg gggctgggcc agcccaggag 250
 ccccaaaagc aagaggaagg ggcaagggcg gcctgggccc ctggtccttg 300
 30 gccctcacca ggtgccactg gacctggtgt cacggatgaa accgtatgcc 350
 cgcattggagg agtatgagag gaacatcgag gagatgttgg ccagctgag 400
 gaacagttca gagctggccc agagaaagtg tgaggtcaac ttgcagctgt 450
 35 ggatgtccaa caagaggagc ctgtctccct ggggctacag catcaaccac 500
 gacccagcc gtatccccgt ggacctccgg aggcacggtg cctgtgtctg 550
 40 ggcttgtgtg aacccttca ccatgcagga ggaccgcagc atggtgagcg 600
 tgccggtgtt cagccagggt cctgtgcgcc gccgcctctg cccgccaccg 650
 cccgcacag ggccttgccg ccagcgcgca gtcattggaga ccatcgctgt 700
 45 gggctgcacc tgcattctct gaatcgacct ggcccagaag ccaggccagc 750
 agcccagagc catctcctt gcaccttctg gccaaagaa gcctatgaaa 800

agtaaact gacttttgaa agcaaaaaaa 830

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5 <211> 397

<212> DNA

<213> Artificial

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10 <221> unknown

<222> 10, 150, 267

<223> unknown base

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ctcacaacct gctgtttctt cttaccattt ccatcttcct ggggctgggc 100

20 agccaggagc cccaaaagca agaggaaggg gcaagggcgg cctgggccc 150

tggcctggcc tcaccaggtg ccaactggacc tgggtgtcacg gatgaaaccg 200

tatgcccgc tggaggagta tgagaggaac atcgaggaga tgggtggcca 250

25 gctgaggaac agctcanaag ctggcccaga gaaagtgtga ggtcaacttg 300

cagctgtgga tgtccaacaa gaaggagcct gtctcccttg gggctacaag 350

30 catcaaccac cgaccccagc cgtatccccg tgggaccttg ccgggac 397

<210> 7

<211> 230

<212> DNA

<213> Artificial

35

<400> 7

cacggatgag gaccgctatc cacagaagct ggccttcgcc gagtgectgt 50

40 gcagaggctg tatcgatgca cggacggggc gcgagacagc tgcgctcaac 100

tccgtgcggc tgetccagag cctgctggtg ctgcgccgcc ggccctgctc 150

ccgcgaacggc tcggggctcc ccacacctgg ggcctttgcc ttccacaccg 200

45 agttcatcca cgtccccgtc ggctgcacct 230

<210> 8

<211> 24

<212> DNA
 <213> Artificial sequence

<400> 8

5 atccacagaa gctggccttc gccg 24

<210> 9

<211> 24

<212> DNA

10 <213> Artificial sequence

<400> 9

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15 <210> 10

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<210> 11

<211> 155

25 <212> PRT

<213> Human

<400> 11

30 Met Thr Pro Gly Lys Thr Ser Leu Val Ser Leu Leu Leu Leu Leu
 1 5 10 15

Ser Leu Glu Ala Ile Val Lys Ala Gly Ile Thr Ile Pro Arg Asn
 20 25 30

35 Pro Gly Cys Pro Asn Ser Glu Asp Lys Asn Phe Pro Arg Thr Val
 35 40 45

Met Val Asn Leu Asn Ile His Asn Arg Asn Thr Asn Thr Asn Pro
 50 55 60

40 Lys Arg Ser Ser Asp Tyr Tyr Asn Arg Ser Thr Ser Pro Trp Asn
 65 70 75

45 Leu His Arg Asn Glu Asp Pro Glu Arg Tyr Pro Ser Val Ile Trp
 80 85 90

Glu Ala Lys Cys Arg His Leu Gly Cys Ile Asn Ala Asp Gly Asn
 95 100 105

Val Asp Tyr His Met Asn Ser Val Pro Ile Gln Gln Glu Ile Leu
 110 115 120

5 Val Leu Arg Arg Glu Pro Pro His Cys Pro Asn Ser Phe Arg Leu
 125 130 135

Glu Lys Ile Leu Val Ser Val Gly Cys Thr Cys Val Thr Pro Ile
 140 145 150

10 Val His His Val Ala
 155

<210> 12
 15 <211> 408
 <212> PRT
 <213> Artificial

<220>
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25 Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys
 20 25 30

Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val
 30 35 40 45

Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
 50 55 60

35 Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
 65 70 75

Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
 80 85 90

40 Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
 95 100 105

Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
 110 115 120

45 Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
 125 130 135

Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
 140 145 150
 5 Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
 155 160 165
 Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
 170 175 180
 10 Pro Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 185 190 195
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
 15 200 205 210
 Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
 215 220 225
 20 Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
 230 235 240
 Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
 245 250 255
 25 Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
 260 265 270
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
 275 280 285
 30 Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
 290 295 300
 Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
 305 310 315
 Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
 320 325 330
 40 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
 335 340 345
 Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
 350 355 360
 45 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
 365 370 375

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 380 385 390

5 Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 395 400 405

Pro Gly Lys
 408

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 <211> 425
 <212> PRT
 <213> Artificial

15 <220>
 <223> Artificial Sequence 1-425

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 Met Thr Leu Leu Pro Gly Leu Leu Phe Leu Thr Trp Leu His Thr
 1 5 10 15

Cys Leu Ala His His Asp Pro Ser Leu Arg Gly His Pro His Ser
 20 25 30

25 His Gly Thr Pro His Cys Tyr Ser Ala Glu Glu Leu Pro Leu Gly
 35 40 45

30 Gln Ala Pro Pro His Leu Leu Ala Arg Gly Ala Lys Trp Gly Gln
 50 55 60

Ala Leu Pro Val Ala Leu Val Ser Ser Leu Glu Ala Ala Ser His
 65 70 75

35 Arg Gly Arg His Glu Arg Pro Ser Ala Thr Thr Gln Cys Pro Val
 80 85 90

Leu Arg Pro Glu Glu Val Leu Glu Ala Asp Thr His Gln Arg Ser
 95 100 105

40 Ile Ser Pro Trp Arg Tyr Arg Val Asp Thr Asp Glu Asp Arg Tyr
 110 115 120

45 Pro Gln Lys Leu Ala Phe Ala Glu Cys Leu Cys Arg Gly Cys Ile
 125 130 135

Asp Ala Arg Thr Gly Arg Glu Thr Ala Ala Leu Asn Ser Val Arg
 140 145 150

	Leu	Leu	Gln	Ser	Leu	Leu	Val	Leu	Arg	Arg	Arg	Pro	Cys	Ser	Arg	
					155					160					165	
5	Asp	Gly	Ser	Gly	Leu	Pro	Thr	Pro	Gly	Ala	Phe	Ala	Phe	His	Thr	
					170					175					180	
	Glu	Phe	Ile	His	Val	Pro	Val	Gly	Cys	Thr	Cys	Val	Leu	Pro	Arg	
					185					190					195	
10	Ser	Val	Pro	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	
					200					205					210	
	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	
15					215					220					225	
	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	
					230					235					240	
20	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	
					245					250					255	
	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	
					260					265					270	
25	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	
					275					280					285	
	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	
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	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	
					305					310					315	
35	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	
					320					325					330	
	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	
					335					340					345	
40	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	
					350					355					360	
	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	
45					365					370					375	
	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	
					380					385					390	

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
 395 400 405
 5 Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 410 415 420
 Leu Ser Pro Gly Lys
 425
 10 <210> 14
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 <212> PRT
 <213> Homo sapiens
 15 <400> 14
 Met Asn Ser Phe Ser Thr Ser Ala Phe Gly Pro Val Ala Phe Ser
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 20 25 30
 Pro Pro Gly Glu Asp Ser Lys Asp Val Ala Ala Pro His Arg Gln
 35 40 45
 25 Pro Leu Thr Ser Ser Glu Arg Ile Asp Lys Gln Ile Arg Tyr Ile
 50 55 60
 30 Leu Asp Gly Ile Ser Ala Leu Arg Lys Glu Thr Cys Asn Lys Ser
 65 70 75
 Asn Met Cys Glu Ser Ser Lys Glu Ala Leu Ala Glu Asn Asn Leu
 80 85 90
 35 Asn Leu Pro Lys Met Ala Glu Lys Asp Gly Cys Phe Gln Ser Gly
 95 100 105
 Phe Asn Glu Glu Thr Cys Leu Val Lys Ile Ile Thr Gly Leu Leu
 110 115 120
 40 Glu Phe Glu Val Tyr Leu Glu Tyr Leu Gln Asn Arg Phe Glu Ser
 125 130 135
 Ser Glu Glu Gln Ala Arg Ala Val Gln Met Ser Thr Lys Val Leu
 45 140 145 150
 Ile Gln Phe Leu Gln Lys Lys Ala Lys Asn Leu Asp Ala Ile Thr
 155 160 165

	Thr	Pro	Asp	Pro	Thr	Thr	Asn	Ala	Ser	Leu	Leu	Thr	Lys	Leu	Gln	
					170					175					180	
5	Ala	Gln	Asn	Gln	Trp	Leu	Gln	Asp	Met	Thr	Thr	His	Leu	Ile	Leu	
					185					190					195	
	Arg	Ser	Phe	Lys	Glu	Phe	Leu	Gln	Ser	Ser	Leu	Arg	Ala	Leu	Arg	
					200					205					210	
10	Gln	Met														
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	<213>	Homo sapiens														
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					20					25					30	
25	Ala	Ser	Leu	Arg	Leu	Leu	Asp	His	Arg	Ala	Leu	Val	Cys	Ser	Gln	
					35					40					45	
	Pro	Gly	Leu	Asn	Cys	Thr	Val	Lys	Asn	Ser	Thr	Cys	Leu	Asp	Asp	
30					50					55					60	
	Ser	Trp	Ile	His	Pro	Arg	Asn	Leu	Thr	Pro	Ser	Ser	Pro	Lys	Asp	
					65					70					75	
35	Leu	Gln	Ile	Gln	Leu	His	Phe	Ala	His	Thr	Gln	Gln	Gly	Asp	Leu	
					80					85					90	
	Phe	Pro	Val	Ala	His	Ile	Glu	Trp	Thr	Leu	Gln	Thr	Asp	Ala	Ser	
					95					100					105	
40	Ile	Leu	Tyr	Leu	Glu	Gly	Ala	Glu	Leu	Ser	Val	Leu	Gln	Leu	Asn	
					110					115					120	
	Thr	Asn	Glu	Arg	Leu	Cys	Val	Arg	Phe	Glu	Phe	Leu	Ser	Lys	Leu	
45					125					130					135	
	Arg	His	His	His	Arg	Arg	Trp	Arg	Phe	Thr	Phe	Ser	His	Phe	Val	
					140					145					150	

Val Asp Pro Asp Gln Glu Tyr Glu Val Thr Val His His Leu Pro
 155 160 165
 5 Lys Pro Ile Pro Asp Gly Asp Pro Asn His Gln Ser Lys Asn Phe
 170 175 180
 Leu Val Pro Asp Cys Glu His Ala Arg Met Lys Val Thr Thr Pro
 185 190 195
 10 Cys Met Ser Ser Gly Ser Leu Trp Asp Pro Asn Ile Thr Val Glu
 200 205 210
 Thr Leu Glu Ala His Gln Leu Arg Val Ser Phe Thr Leu Trp Asn
 15 215 220 225
 Glu Ser Thr His Tyr Gln Ile Leu Leu Thr Ser Phe Pro His Met
 230 235 240
 20 Glu Asn His Ser Cys Phe Glu His Met His His Ile Pro Ala Pro
 245 250 255
 Arg Pro Glu Glu Phe His Gln Arg Ser Asn Val Thr Leu Thr Leu
 260 265 270
 25 Arg Asn Leu Lys Gly Cys Cys Arg His Gln Val Gln Ile Gln Pro
 275 280 285
 Phe Phe Ser Ser Cys Leu Asn Asp Cys Leu Arg His Ser Ala Thr
 30 290 295 300
 Val Ser Cys Pro Glu Met Pro Asp Thr Pro Glu Pro Ile Pro Asp
 305 310 315
 35 Tyr Met Pro Leu Trp
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 40 <212> DNA
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 ggcctgggccc cctggcccct ggcctcacc aggtgccact ggacctggtg 150

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 ggagatggtg gcccagctga ggaacagctc agagctggcc cagagaaagt 250
 5 gtgaggtcaa cttgcagctg tggatgtcca acaagaggag cctgtctccc 300
 tggggctaca gcatcaacca cgaccccagc cgtatccccg tggacctgcc 350
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 aggaccgcag catggtgagc gtgccggtgt tcagccaggt tcctgtgcgc 450
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<400> 17

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 cacactgcta ctgggtgag gaactgcccc tcggccaggc cccccacac 150
 30 ctgctggctc gaggtgccaa gtgggggag gctttgctg tagccctggt 200
 gtccagcctg gaggcagcaa gccacagggg gaggcacgag aggcctcag 250
 ctacgacca gtgcccgggt ctgcggccgg aggaggtgtt ggaggcagac 300
 35 acccaccagc gctccatctc accctggaga taccgtgtgg acacggatga 350
 ggaccgctat ccacagaagc tggccttcgc cgagtgcctg tgcagaggct 400
 gtatcgatgc acggacgggc cgcgagacag ctgcgctcaa ctccgtgcgg 450
 ctgctccaga gcctgctggt gctgcgccgc cggccctgct cccgcgacgg 500
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5 <220>
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<400> 18
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15 <213> Homo sapiens

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Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His
 1 5 10 15

20 Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn
 20 25 30

25 Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp
 35 40 45

Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser
 50 55 60

30 Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu
 65 70 75

Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys
 80 85 90

35 Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr
 95 100 105

40 Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu
 110 115 120

Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu
 125 130 135

45 Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val
 140 145 150

Tyr Phe Gly Ile Ile Ala Leu

155 157

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 5 <212> DNA
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 ctgtacctcg aggggtgcaga g 21

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 25 tgtagtcc 58

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 30 <213> Homo sapiens

 <400> 22
 Met Gly Ala Ala Arg Ser Pro Pro Ser Ala Val Pro Gly Pro Leu
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 35 Leu Gly Leu Leu Leu Leu Leu Gly Val Leu Ala Pro Gly Gly
 20 25 30
 Ala Ser Leu Arg Leu Leu Asp His Arg Ala Leu Val Cys Ser Gln
 40 35 40 45
 Pro Gly Leu Asn Cys Thr Val Lys Asn Ser Thr Cys Leu Asp Asp
 50 55 60
 45 Ser Trp Ile His Pro Arg Asn Leu Thr Pro Ser Ser Pro Lys Asp
 65 70 75

	Leu	Gln	Ile	Gln	Leu	His	Phe	Ala	His	Thr	Gln	Gln	Gly	Asp	Leu	
					80					85					90	
5	Phe	Pro	Val	Ala	His	Ile	Glu	Trp	Thr	Leu	Gln	Thr	Asp	Ala	Ser	
					95					100					105	
	Ile	Leu	Tyr	Leu	Glu	Gly	Ala	Glu	Leu	Ser	Val	Leu	Gln	Leu	Asn	
					110					115					120	
10	Thr	Asn	Glu	Arg	Leu	Cys	Val	Arg	Phe	Glu	Phe	Leu	Ser	Lys	Leu	
					125					130					135	
	Arg	His	His	His	Arg	Arg	Trp	Arg	Phe	Thr	Phe	Ser	His	Phe	Val	
					140					145					150	
15	Val	Asp	Pro	Asp	Gln	Glu	Tyr	Glu	Val	Thr	Val	His	His	Leu	Pro	
					155					160					165	
	Lys	Pro	Ile	Pro	Asp	Gly	Asp	Pro	Asn	His	Gln	Ser	Lys	Asn	Phe	
20					170					175					180	
	Leu	Val	Pro	Asp	Cys	Glu	His	Ala	Arg	Met	Lys	Val	Thr	Thr	Pro	
					185					190					195	
25	Cys	Met	Ser	Ser	Gly	Ser	Leu	Trp	Asp	Pro	Asn	Ile	Thr	Val	Glu	
					200					205					210	
	Thr	Leu	Glu	Ala	His	Gln	Leu	Arg	Val	Ser	Phe	Thr	Leu	Trp	Asn	
					215					220					225	
30	Glu	Ser	Thr	His	Tyr	Gln	Ile	Leu	Leu	Thr	Ser	Phe	Pro	His	Met	
					230					235					240	
	Glu	Asn	His	Ser	Cys	Phe	Glu	His	Met	His	His	Ile	Pro	Ala	Pro	
35					245					250					255	
	Arg	Pro	Glu	Glu	Phe	His	Gln	Arg	Ser	Asn	Val	Thr	Leu	Thr	Leu	
					260					265					270	
40	Arg	Asn	Leu	Lys	Gly	Cys	Cys	Arg	His	Gln	Val	Gln	Ile	Gln	Pro	
					275					280					285	
	Phe	Phe	Ser	Ser	Cys	Leu	Asn	Asp	Cys	Leu	Arg	His	Ser	Ala	Thr	
					290					295					300	
45	Val	Ser	Cys	Pro	Glu	Met	Pro	Asp	Thr	Pro	Glu	Pro	Ile	Pro	Asp	
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Ile Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg
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Val Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met
20 35 40 45

25 Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln
 65 70 75

Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala
95 100 105

Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val
125 130 135

Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
155 160 165

19

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 <212> PRT
 <213> Artificial

5

<220>
 <223> Artificial sequence 1-206

<400> 24

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	1 5 10 15	
	Cys Leu Ala His His Asp Pro Ser Leu Arg Gly His Pro His Ser	
	20 25 30	
15	His Gly Thr Pro His Cys Tyr Ser Ala Glu Glu Leu Pro Leu Gly	
	35 40 45	
	Gln Ala Pro Pro His Leu Leu Ala Arg Gly Ala Lys Trp Gly Gln	
20	50 55 60	
	Ala Leu Pro Val Ala Leu Val Ser Ser Leu Glu Ala Ala Ser His	
	65 70 75	
25	Arg Gly Arg His Glu Arg Pro Ser Ala Thr Thr Gln Cys Pro Val	
	80 85 90	
	Leu Arg Pro Glu Glu Val Leu Glu Ala Asp Thr His Gln Arg Ser	
	95 100 105	
30	Ile Ser Pro Trp Arg Tyr Arg Val Asp Thr Asp Glu Asp Arg Tyr	
	110 115 120	
	Pro Gln Lys Leu Ala Phe Ala Glu Cys Leu Cys Arg Gly Cys Ile	
35	125 130 135	
	Asp Ala Arg Thr Gly Arg Glu Thr Ala Ala Leu Asn Ser Val Arg	
	140 145 150	
40	Leu Leu Gln Ser Leu Leu Val Leu Arg Arg Arg Pro Cys Ser Arg	
	155 160 165	
	Asp Gly Ser Gly Leu Pro Thr Pro Gly Ala Phe Ala Phe His Thr	
	170 175 180	
45	Glu Phe Ile His Val Pro Val Gly Cys Thr Cys Val Leu Pro Arg	
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Ser Val Gly His His His His His His His
 200 205 206

<210> 25

5 <211> 271

<212> PRT

<213> Homo sapiens

<400> 25

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	Ser	Glu	Asn	Glu	Glu	Asp	Ser	Ser	Ser	Ile	Asp	His	Leu	Ser	Leu
					20					25					30
15	Asn	Gln	Lys	Ser	Phe	Tyr	His	Val	Ser	Tyr	Gly	Pro	Leu	His	Glu
					35					40					45
	Gly	Cys	Met	Asp	Gln	Ser	Val	Ser	Leu	Ser	Ile	Ser	Glu	Thr	Ser
20					50					55					60
	Lys	Thr	Ser	Lys	Leu	Thr	Phe	Lys	Glu	Ser	Met	Val	Val	Val	Ala
					65					70					75
25	Thr	Asn	Gly	Lys	Val	Leu	Lys	Lys	Arg	Arg	Leu	Ser	Leu	Ser	Gln
					80					85					90
	Ser	Ile	Thr	Asp	Asp	Asp	Leu	Glu	Ala	Ile	Ala	Asn	Asp	Ser	Glu
					95					100					105
30	Glu	Glu	Ile	Ile	Lys	Pro	Arg	Ser	Ala	Pro	Phe	Ser	Phe	Leu	Ser
					110					115					120
	Asn	Val	Lys	Tyr	Asn	Phe	Met	Arg	Ile	Ile	Lys	Tyr	Glu	Phe	Ile
35					125					130					135
	Leu	Asn	Asp	Ala	Leu	Asn	Gln	Ser	Ile	Ile	Arg	Ala	Asn	Asp	Gln
					140					145					150
40	Tyr	Leu	Thr	Ala	Ala	Ala	Leu	His	Asn	Leu	Asp	Glu	Ala	Val	Lys
					155					160					165
	Phe	Asp	Met	Gly	Ala	Tyr	Lys	Ser	Ser	Lys	Asp	Asp	Ala	Lys	Ile
					170					175					180
45	Thr	Val	Ile	Leu	Arg	Ile	Ser	Lys	Thr	Gln	Leu	Tyr	Val	Thr	Ala
					185					190					195

Gln Asp Glu Asp Gln Pro Val Leu Leu Lys Glu Met Pro Glu Ile
 200 205 210
 Pro Lys Thr Ile Thr Gly Ser Glu Thr Asn Leu Leu Phe Phe Trp
 5 215 220 225
 Glu Thr His Gly Thr Lys Asn Tyr Phe Thr Ser Val Ala His Pro
 230 235 240
 10 Asn Leu Phe Ile Ala Thr Lys Gln Asp Tyr Trp Val Cys Leu Ala
 245 250 255
 Gly Gly Pro Pro Ser Ile Thr Asp Phe Gln Ile Leu Glu Asn Gln
 260 265 270
 15 Ala
 271
 <210> 26
 20 <211> 177
 <212> PRT
 <213> Homo sapiens
 <400> 26
 25 Met Glu Ile Cys Arg Gly Leu Arg Ser His Leu Ile Thr Leu Leu
 1 5 10 15
 Leu Phe Leu Phe His Ser Glu Thr Ile Cys Arg Pro Ser Gly Arg
 20 25 30
 30 Lys Ser Ser Lys Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln
 35 35 40 45
 Lys Thr Phe Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu
 50 55 60
 35 Gln Gly Pro Asn Val Asn Leu Glu Glu Lys Ile Asp Val Val Pro
 65 70 75
 40 Ile Glu Pro His Ala Leu Phe Leu Gly Ile His Gly Gly Lys Met
 80 85 90
 Cys Leu Ser Cys Val Lys Ser Gly Asp Glu Thr Arg Leu Gln Leu
 95 100 105
 45 Glu Ala Val Asn Ile Thr Asp Leu Ser Glu Asn Arg Lys Gln Asp
 110 115 120

	Lys	Arg	Phe	Ala	Phe	Ile	Arg	Ser	Asp	Ser	Gly	Pro	Thr	Thr	Ser	
					125					130					135	
5	Phe	Glu	Ser	Ala	Ala	Cys	Pro	Gly	Trp	Phe	Leu	Cys	Thr	Ala	Met	
					140					145					150	
	Glu	Ala	Asp	Gln	Pro	Val	Ser	Leu	Thr	Asn	Met	Pro	Asp	Glu	Gly	
					155					160					165	
10	Val	Met	Val	Thr	Leu	Phe	Tyr	Phe	Gln	Glu	Asp	Glu				
					170					175		177				